

Translation

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PCT/JP2003/014234



PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 0347	FOR FURTHER ACTION See Form PCT/IPEA/416	
International application No. PCT/JP2003/014234	International filing date (day/month/year) 07 November 2003 (07.11.2003)	Priority date (day/month/year) 12 November 2002 (12.11.2002)
International Patent Classification (IPC) or national classification and IPC H02J 1/00, 3/00, G05F 1/45		
Applicant KABUSHIKI KAISHA YASKAWA DENKI		

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 3 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
  - ☐ (sent to the applicant and to the International Bureau) a total of \_\_\_\_\_ sheets, as follows:
    - ☐ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
    - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
  - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) \_\_\_\_\_, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
- This report contains indications relating to the following items:
  - ☒ Box No. I Basis of the report
  - ☐ Box No. II Priority
  - ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - ☐ Box No. IV Lack of unity of invention
  - ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - ☐ Box No. VI Certain documents cited
  - ☐ Box No. VII Certain defects in the international application
  - ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 08 April 2004 (08.04.2004)	Date of completion of this report 21 October 2004 (21.10.2004)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP2003/014234

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☐ This report is based on translations from the original language into the following language \_\_\_\_\_, which is language of a translation furnished for the purpose of:
- ☐ international search (under Rules 12.3 and 23.1(b))
- ☐ publication of the international application (under Rule 12.4)
- ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

- ☒ The international application as originally filed/furnished
- ☐ the description:
- pages \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the claims:
- pages \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_, as amended (together with any statement) under Article 19
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ the drawings:
- pages \_\_\_\_\_, as originally filed/furnished
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/figs \_\_\_\_\_
- ☐ the sequence listing (*specify*): \_\_\_\_\_
- ☐ any table(s) related to sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/JP03/14234

**Box No. V** Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims		YES
	Claims	1, 2	NO
Inventive step (IS)	Claims		YES
	Claims	1, 2	NO
Industrial applicability (IA)	Claims	1, 2	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

## Claims 1, 2

Document 1: JP, 62-201065, A (Toshiba Corp.), 04 September, 1987, page 2, upper right column, line 6 to lower left column, line 5; page 5, upper right column, line 8 to lower right column, line 19, Fig. 5 (Family: none)

The inventions relating to claims 1 and 2 do not appear to possess novelty or to involve an inventive step based on document 1 cited in the ISR.

Document 1 describes preventing rush current by using the gate signal of a PWM converter and gradually increasing reference voltage after a main switch is turned on at the time of start-up, and this is substantially equivalent to the invention of claim 1 of this application.

Furthermore, document 1 describes that when causing the operation of a PWM converter to stop, the reverse start-up mode should be taken. Thus the invention of claim 2 of this application is also substantially described.

[FIG. 3]

S1: accept driving power supply turn-ON instruction  
 S2: judge as to whether or not driving power supply  
 is turned ON  
 S3: close contact of relay apparatus  
 S4: adjust feed starting angle of current control  
 rectifying element  
 S5: commence driving control operation  
 A1: turn-ON is not permitted  
 A2: turn-ON is permitted  
 A3: neglect driving power supply turn-ON  
 instruction

[FIG. 4]

S11: accept driving power supply turn-OFF  
 instruction  
 S12: set current control rectifying element to be  
 non-feed condition  
 S13: open contact of relay apparatus

[FIG. 6]

68: input current converting circuit  
 70: drive circuit  
 69: control apparatus (microcomputer)  
 65: inverter circuit  
 73: drive circuit .

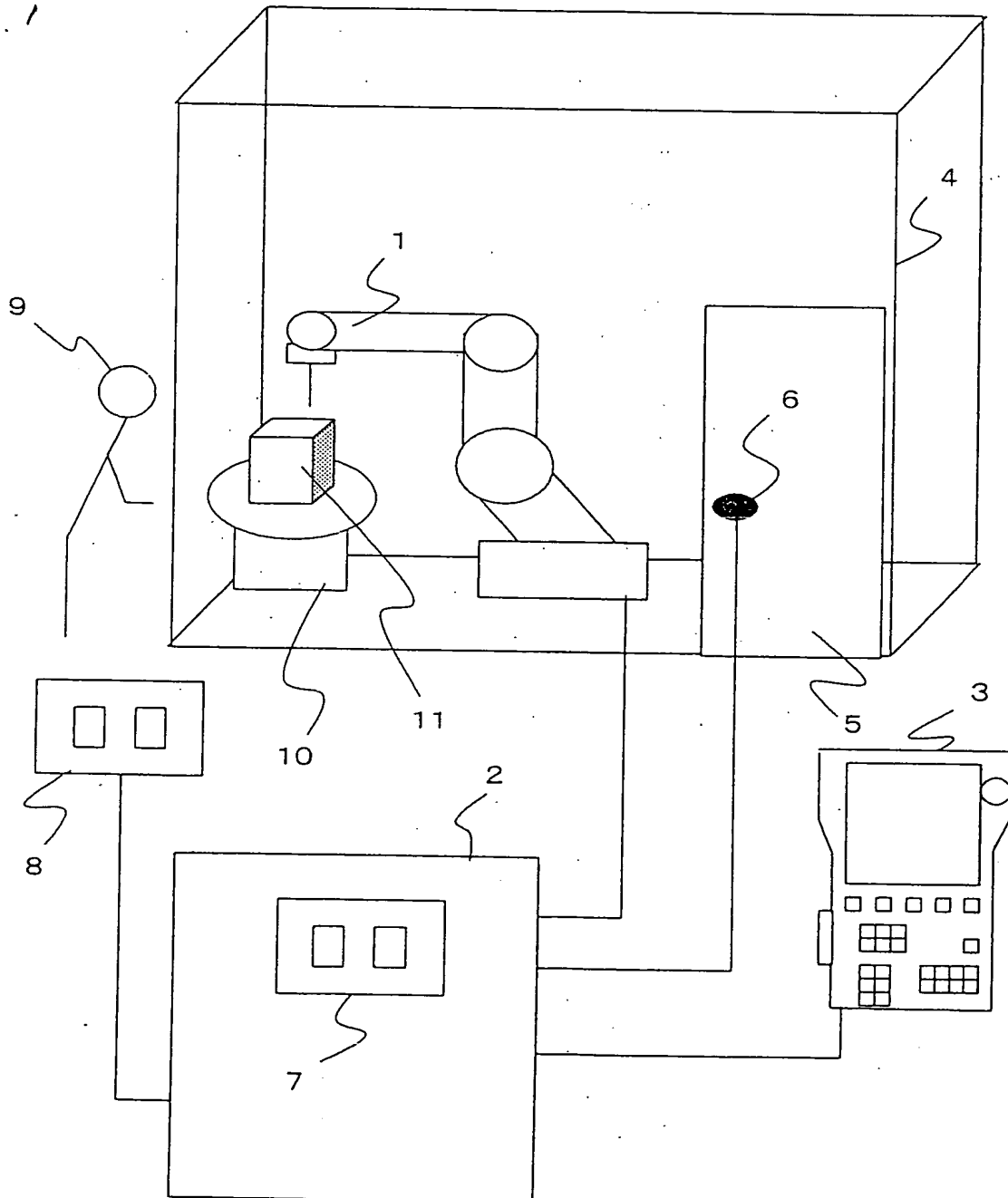
[FIG. 7]

83: control unit

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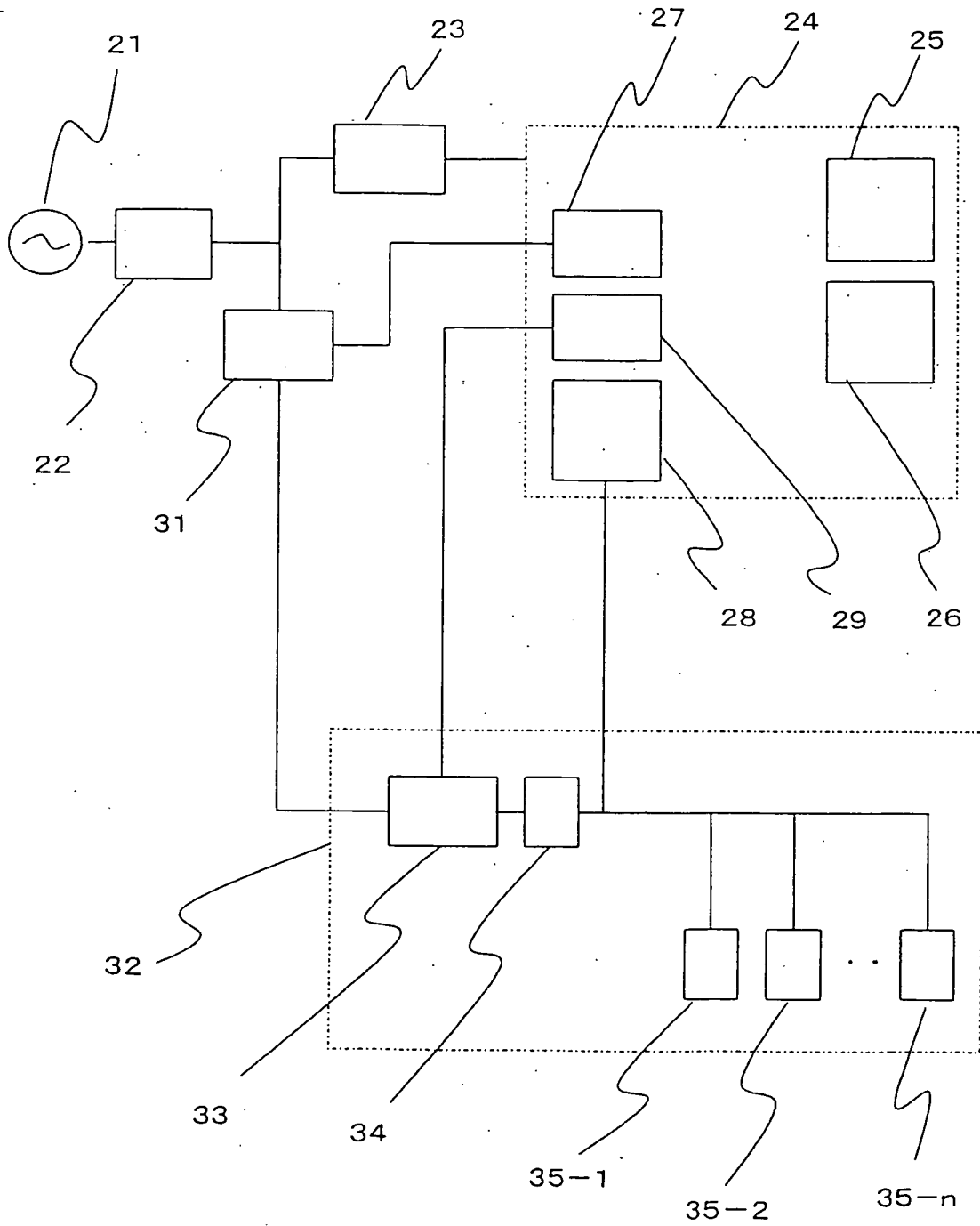
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Fig. 1



~~Fig. 2~~

Fig. 2



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図3

Fig. 3

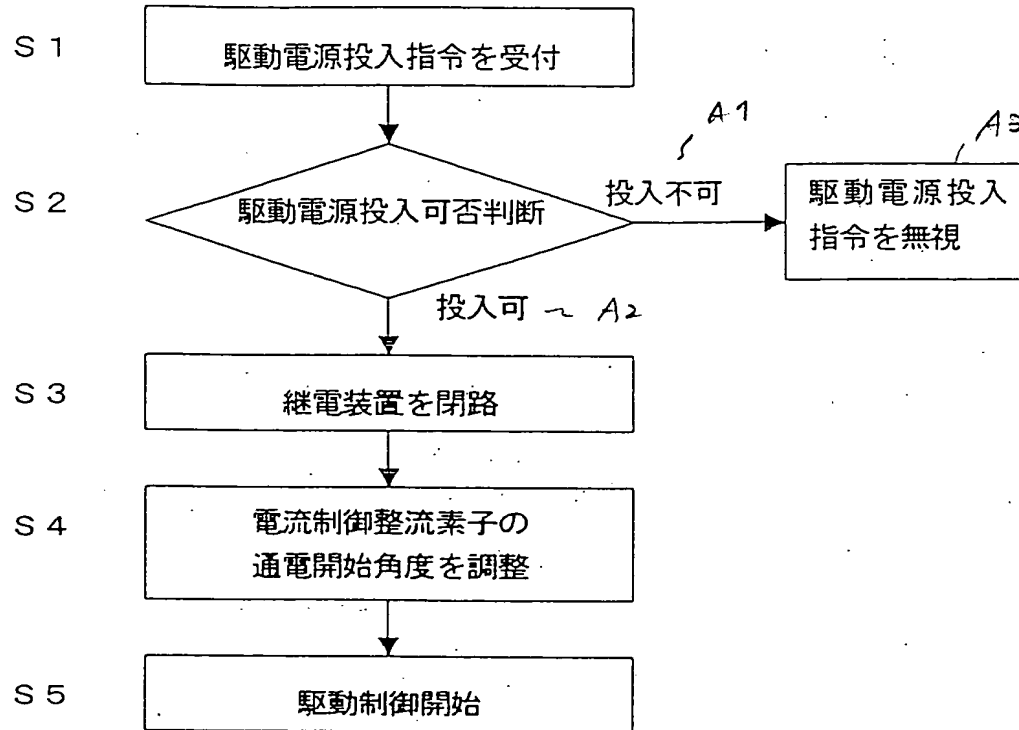
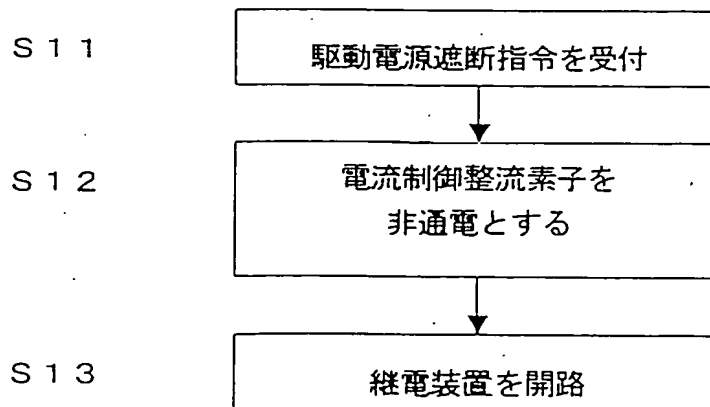


図4

Fig. 4



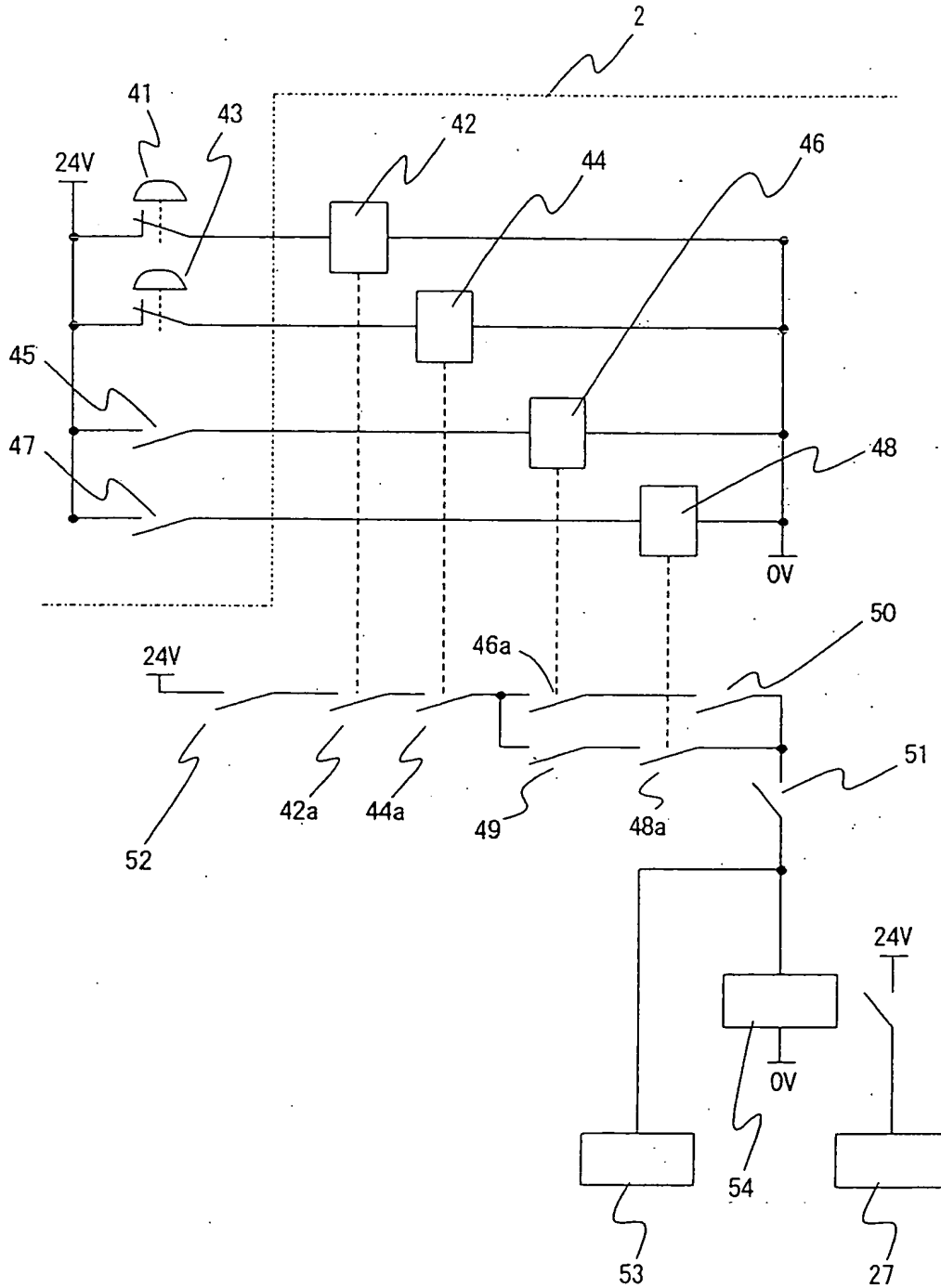


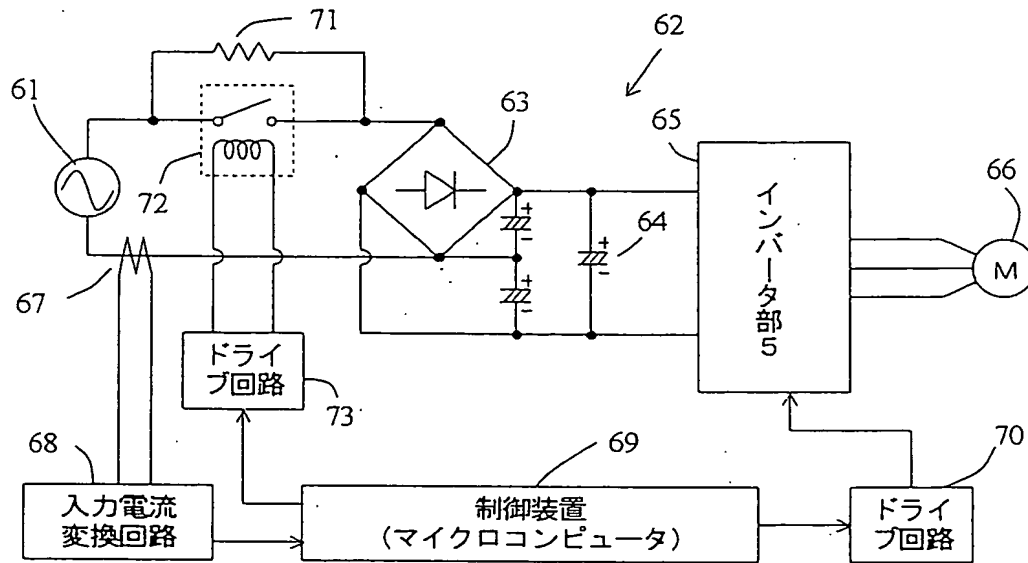
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~~Fig. 5~~

Fig. 5





—圖7—

